

MEMO

DATE: 3/27/02

FROM: Bill Neuffer; OPSG/AQSSD/OAQPS/EPA

TO: NOx SIP Call Docket (A-96-56)

SUBJECT: Excel Spreadsheets - Yearly Utility Fossil Fuel Heat Inputs.

Attached are spreadsheets for all 21 NOx SIP Call states that show yearly fossil fuel heat inputs for electrical generation. These data were used in determining 8 yr decreases in yearly fossil fuel heat inputs.

This data was taken from US Department of Energy websites. For example, Virginia's is contained at www.eia.doe/emeu/sep/va/consum/eu.htm. To determine 1999 and 2000 yearly fossil fuel heat inputs, the Electric Power Annuals -Volume 1 for 1999 and 2000 were also used as the yearly fossil fuel heat inputs for 2000 were not available. To determine the 2000 fossil fuel heat inputs, the fossil fuel generation for 2000 was compared to the fossil fuel generation for 1998. This factor was then multiplied by the 1998 yearly fossil fuel heat input to give the 2000 yearly fossil fuel heat input. The 1999 fossil fuel heat inputs were also determined in a similar manner. For example, for Alabama, the ratio in yearly fossil fuel generation(million kilowatthours) for 2000/1998 was 82,737/ 76,779 or 1.07756. Multiplying 1.07756 by the 1998 yearl fossil fuel heat input of 755 trillion Btu gives the 2000 yearly fossil fuel heat input-814 trillion Btu.

Also, as a separate item, is a summary of 8 yr decreases in yearly fossil fuel heat input for the 21 SIP call states.

These documents replace item XV C-05 which inadvertently did not include the summary of 8 yr decreases. Also, the spreadsheets for the 21 SIP call states have been revised to make column headings clearer.

Alabama

YEAR	Fossil Fuel (trillion Btu)
1960	185
1961	209
1962	239
1963	262
1964	258
1965	304
1966	344
1967	336
1968	371
1969	381
1970	400
1971	372
1972	399
1973	453
1974	427
1975	411
1976	422
1977	446
1978	407
1979	453
1980	472
1981	471
1982	377
1983	412
1984	429
1985	522
1986	524
1987	509
1988	491
1989	529
1990	537
1991	579
1992	607
1993	672
1994	629
1995	691
1996	744
1997	725
1998	755
1999	765
2000	814

Connecticut Yearly Heat Input	
	Fossil Fuel
YEAR	(trillion Btu)
1960	87
1961	92
1962	100
1963	106
1964	112
1965	123
1966	137
1967	142
1968	148
1969	165
1970	179
1971	174
1972	185
1973	191
1974	172
1975	141
1976	126
1977	119
1978	124
1979	116
1980	136
1981	115
1982	110
1983	124
1984	132
1985	129
1986	137
1987	128
1988	139
1989	146
1990	119
1991	109
1992	79
1993	65
1994	66
1995	79
1996	92
1997	133
1998	119
1999	116
2000	125

Delaware Total utility fossil fuel yearly heat input	
	Fossil Fuel
YEAR	(trillion Btu)
1960	22
1961	23
1962	26
1963	30
1964	33
1965	34
1966	43
1967	45
1968	50
1969	52
1970	59
1971	58
1972	57
1973	63
1974	73
1975	65
1976	69
1977	69
1978	75
1979	74
1980	72
1981	87
1982	73
1983	99
1984	98
1985	93
1986	89
1987	91
1988	94
1989	91
1990	87
1991	92
1992	79
1993	90
1994	87
1995	85
1996	83
1997	70
1998	65
1999	65
2000	62

Georgia

YEAR	Fossil Fuel (trillion Btu)
1960	92
1961	87
1962	83
1963	98
1964	105
1965	133
1966	152
1967	151
1968	195
1969	224
1970	248
1971	283
1972	320
1973	335
1974	368
1975	374
1976	394
1977	459
1978	466
1979	475
1980	515
1981	533
1982	513
1983	553
1984	644
1985	689
1986	656
1987	664
1988	651
1989	628
1990	666
1991	595
1992	573
1993	622
1994	646
1995	689
1996	685
1997	730
1998	754
1999	799
2000	841

Illinois

YEAR	Fossil Fuel (trillion Btu)
1960	463
1961	469
1962	477
1963	508
1964	545
1965	575
1966	638
1967	658
1968	709
1969	736
1970	781
1971	780
1972	772
1973	790
1974	783
1975	758
1976	784
1977	798
1978	818
1979	840
1980	818
1981	753
1982	717
1983	765
1984	716
1985	688
1986	685
1987	644
1988	590
1989	571
1990	613
1991	627
1992	562
1993	687
1994	715
1995	719
1996	791
1997	854
1998	860
1999	842
2000	910

Indiana yearly heat input

Fossil Fuel

YEAR (trillion Btu)

1960	315
1961	329
1962	348
1963	367
1964	389
1965	421
1966	455
1967	441
1968	480
1969	528
1970	533
1971	536
1972	550
1973	602
1974	579
1975	602
1976	634
1977	656
1978	645
1979	696
1980	734
1981	706
1982	672
1983	739
1984	832
1985	820
1986	801
1987	810
1988	876
1989	916
1990	1022
1991	1023
1992	1009
1993	1037
1994	1076
1995	1088
1996	1103
1997	1160
1998	1178
1999	1188
2000	1248

Kentucky yearly heat input**Fossil Fuel****YEAR (trillion Btu)**

1960	174
1961	175
1962	178
1963	230
1964	266
1965	280
1966	288
1967	301
1968	317
1969	353
1970	419
1971	455
1972	496
1973	495
1974	504
1975	481
1976	551
1977	546
1978	543
1979	524
1980	562
1981	598
1982	561
1983	559
1984	576
1985	620
1986	660
1987	659
1988	736
1989	671
1990	716
1991	728
1992	738
1993	826
1994	810
1995	833
1996	859
1997	890
1998	838
1999	811
2000	817

Maryland Yearly heat input**Fossil Fuel****YEAR (trillion Btu)**

1960	83
1961	88
1962	99
1963	116
1964	129
1965	161
1966	177
1967	189
1968	204
1969	209
1970	226
1971	234
1972	260
1973	267
1974	286
1975	211
1976	235
1977	215
1978	242
1979	233
1980	209
1981	179
1982	186
1983	200
1984	226
1985	216
1986	235
1987	253
1988	279
1989	323
1990	289
1991	286
1992	273
1993	299
1994	309
1995	300
1996	299
1997	299
1998	334
1999	345
2000	315

Mass yearly heat input**Fossil Fuel****YEAR (trillion Btu)**

1960	130
1961	149
1962	152
1963	157
1964	177
1965	197
1966	212
1967	224
1968	233
1969	253
1970	292
1971	291
1972	312
1973	294
1974	267
1975	274
1976	296
1977	298
1978	308
1979	296
1980	314
1981	285
1982	297
1983	290
1984	316
1985	303
1986	318
1987	333
1988	335
1989	363
1990	319
1991	309
1992	281
1993	240
1994	236
1995	230
1996	219
1997	283
1998	198
1999	192
2000	165

Michigan

YEAR	Fossil Fuel
	(trillion Btu)
1960	264
1961	266
1962	305
1963	335
1964	365
1965	405
1966	465
1967	490
1968	533
1969	567
1970	586
1971	621
1972	603
1973	612
1974	626
1975	644
1976	623
1977	616
1978	653
1979	670
1980	616
1981	600
1982	545
1983	545
1984	586
1985	618
1986	648
1987	728
1988	716
1989	697
1990	676
1991	678
1992	638
1993	640
1994	696
1995	688
1996	694
1997	693
1998	759
1999	764
2000	738

Missouri Fossil Fuel**Fossil Fuel****YEAR (trillion Btu)**

1960	114
1961	117
1962	142
1963	159
1964	166
1965	172
1966	171
1967	179
1968	204
1969	252
1970	298
1971	324
1972	346
1973	395
1974	386
1975	414
1976	449
1977	489
1978	484
1979	494
1980	513
1981	504
1982	496
1983	532
1984	556
1985	488
1986	474
1987	491
1988	511
1989	514
1990	509
1991	515
1992	496
1993	446
1994	526
1995	582
1996	606
1997	642
1998	662
1999	653
2000	681

NJ	Yearly Fossil Fuel	Heat Input
YEAR	(trillion Btu)	
1960		193
1961		204
1962		215
1963		229
1964		254
1965		281
1966		312
1967		318
1968		342
1969		375
1970		392
1971		369
1972		355
1973		390
1974		350
1975		229
1976		239
1977		261
1978		243
1979		221
1980		247
1981		226
1982		195
1983		237
1984		232
1985		191
1986		165
1987		195
1988		184
1989		205
1990		144
1991		140
1992		110
1993		107
1994		114
1995		112
1996		95
1997		110
1998		101
1999		107
2000		114

NY	Yearly Fossil Fuel	Heat Input
YEAR	(trillion Btu)	
1960	451	
1961	444	
1962	458	
1963	493	
1964	542	
1965	570	
1966	604	
1967	640	
1968	676	
1969	714	
1970	757	
1971	775	
1972	788	
1973	793	
1974	739	
1975	722	
1976	699	
1977	761	
1978	710	
1979	666	
1980	694	
1981	690	
1982	676	
1983	672	
1984	668	
1985	652	
1986	633	
1987	708	
1988	795	
1989	876	
1990	832	
1991	757	
1992	657	
1993	553	
1994	523	
1995	547	
1996	462	
1997	533	
1998	613	
1999	602	
2000	586	

North Carolina	Yearly Heat Input
	Fossil Fuel
YEAR	(trillion Btu)
1960	149
1961	161
1962	178
1963	201
1964	218
1965	251
1966	299
1967	327
1968	377
1969	419
1970	460
1971	465
1972	498
1973	536
1974	513
1975	435
1976	510
1977	514
1978	469
1979	518
1980	592
1981	614
1982	580
1983	548
1984	509
1985	493
1986	519
1987	437
1988	451
1989	494
1990	457
1991	457
1992	528
1993	580
1994	516
1995	540
1996	629
1997	681
1998	682
1999	675
2000	709

Ohio Yearly Heat Input**Fossil Fuel****YEAR (trillion Btu)**

1960	517
1961	498
1962	529
1963	554
1964	564
1965	591
1966	634
1967	678
1968	747
1969	810
1970	826
1971	884
1972	941
1973	1,027
1974	1,031
1975	1,065
1976	1,115
1977	1,137
1978	1,129
1979	1,189
1980	1,128
1981	1,108
1982	1,063
1983	1,043
1984	1,063
1985	1,108
1986	1,144
1987	1,136
1988	1,170
1989	1,202
1990	1,166
1991	1,192
1992	1,213
1993	1,246
1994	1,197
1995	1,218
1996	1,297
1997	1,265
1998	1,310
1999	1,259
2000	1,321

Pa	Yearly Fossil Fuel	Heat Input
YEAR	(trillion Btu)	
1960	449	
1961	457	
1962	484	
1963	509	
1964	558	
1965	585	
1966	622	
1967	644	
1968	701	
1969	768	
1970	854	
1971	928	
1972	1,005	
1973	1,064	
1974	972	
1975	946	
1976	1,007	
1977	1,027	
1978	1,068	
1979	1,140	
1980	1,279	
1981	1,066	
1982	1,044	
1983	1,106	
1984	1,106	
1985	1,108	
1986	1,090	
1987	1,099	
1988	1,145	
1989	1,151	
1990	1,061	
1991	1,038	
1992	1,029	
1993	1,056	
1994	1,011	
1995	1,030	
1996	1,058	
1997	1,080	
1998	1,112	
1999	912	
2000	966	

Rhode Island Fossil Fuel	yearly heat input (trillion Btu)
1960	21
1961	20
1962	20
1963	18
1964	17
1965	22
1966	17
1967	19
1968	21
1969	21
1970	21
1971	19
1972	17
1973	16
1974	16
1975	10
1976	7
1977	7
1978	7
1979	8
1980	12
1981	11
1982	11
1983	8
1984	8
1985	8
1986	9
1987	11
1988	10
1989	7
1990	8
1991	3
1992	2
1993	1
1994	2
1995	6
1996	26
1997	28
1998	16
1999	8
2000	13

South Carolina		Yearly heat input
	Fossil Fuel	
YEAR	(trillion Btu)	
1960	67	
1961	74	
1962	79	
1963	88	
1964	80	
1965	90	
1966	101	
1967	108	
1968	120	
1969	129	
1970	153	
1971	161	
1972	178	
1973	189	
1974	175	
1975	149	
1976	168	
1977	198	
1978	203	
1979	199	
1980	219	
1981	232	
1982	216	
1983	177	
1984	187	
1985	200	
1986	199	
1987	230	
1988	237	
1989	244	
1990	239	
1991	246	
1992	236	
1993	270	
1994	276	
1995	268	
1996	305	
1997	317	
1998	335	
1999	360	
2000	393	

Tenn. Yearly heat input

Fossil Fuel

YEAR (trillion Btu)

1960	300
1961	277
1962	274
1963	306
1964	264
1965	268
1966	293
1967	288
1968	366
1969	373
1970	351
1971	330
1972	398
1973	478
1974	408
1975	422
1976	517
1977	510
1978	518
1979	468
1980	507
1981	478
1982	393
1983	442
1984	452
1985	494
1986	502
1987	497
1988	508
1989	461
1990	500
1991	470
1992	495
1993	588
1994	522
1995	574
1996	557
1997	584
1998	561
1999	550
2000	599

Virginia Heat Input**Fossil Fuel**

YEAR (trillion Btu)

1960	169
1961	179
1962	199
1963	207
1964	219
1965	222
1966	224
1967	219
1968	248
1969	271
1970	286
1971	289
1972	294
1973	290
1974	289
1975	268
1976	302
1977	304
1978	280
1979	289
1980	238
1981	207
1982	189
1983	187
1984	204
1985	196
1986	221
1987	243
1988	245
1989	289
1990	228
1991	248
1992	248
1993	284
1994	266
1995	272
1996	295
1997	312
1998	358
1999	367
2000	401

WVA

YEAR	Fossil Fuel (trillion Btu)
1960	141
1961	162
1962	166
1963	179
1964	185
1965	191
1966	229
1967	267
1968	312
1969	346
1970	347
1971	377
1972	465
1973	549
1974	586
1975	599
1976	645
1977	649
1978	601
1979	654
1980	692
1981	730
1982	680
1983	716
1984	766
1985	779
1986	766
1987	761
1988	791
1989	803
1990	744
1991	689
1992	703
1993	694
1994	756
1995	761
1996	811
1997	855
1998	865
1999	892
2000	879